

REMARKS

The Office Action mailed on January 11, 2008 has been reviewed, along with the art cited. Claims 1-34, and 36-48 are pending in this application. Claim 35 is canceled. Claim 48 is new.

Rejections Under 35 U.S.C. § 102

Claims 1-13, 15-19, and 26-42 were rejected under 35 USC § 102(b) as being anticipated by Loo (International Application Published under PCT No. WO 99/26448), which is referred to herein as “the Loo reference.” To establish a section 102 rejection, a single reference must teach every aspect of the claim either explicitly or inherently. MPEP 706(02).

CLAIM 1

The applicant respectfully traverses the rejection of amended claim 1 under section 102. The Loo reference does not teach all the aspects of claim 1. For example, the Loo reference does not teach “A method for automatically adapting to statically varying packet size,” as claimed in claim 1. The Examiner asserts the Loo reference discloses this aspect in Figures 1-3.

The Loo reference discloses that “Figure 1 is a diagram of the structure of an ATM bit stream...consisting of a series of ATM cells 10, 11, 12, etc.” at column 7, line 21-27. The Loo reference describes the *fixed length of the ATM cell* at column 8, lines 5-10 as:

“The body 10B is in fact 48 bytes long so the *total cell length is 53 bytes*, i.e., 424 (53 x 8) bits.

The purpose of the present apparatus is to identify the points in the bit stream shown in Fig.1A where the ATM cell boundaries lie. There are 424 possible positions for the cell boundaries, *only one of which is correct.*” (Emphasis added.)

Referring to Figure 2 at column 8, line 12 – column 9, line 21, Loo discloses how “true cell headers have been detected” (column 9 line 20-21) of the possible 242

positions. Loo discloses only one “cell length of 53 bytes,” which is not a statically varying packet size.

Statically varying is defined in the present application at paragraph 16 as:

“...the packet size is said to be “statically varying” because the size of the packets is able to change (“varying”) but stays the same (“statically”) for a long enough time for useful information to be transmitted over the system. In this way, system upgrades that introduce or change out of band signaling are accomplished without any changes or modifications to the TC layer.”

Referring to Figure 3 at column 10, lines 9-10, Loo discloses how “the FIFO contains additional match counter bits, for counting the number of sequential matches at the *predetermined spacing*.” The “predetermined spacing” is fixed and does not demarcate a statically varying packet size.

For another example, the Loo reference does not teach “determining the statically varying packet size based on the first and second boundaries.” The Examiner asserts the Loo reference discloses this aspect at column 11, lines 21-25. At column 11, lines 21-25 Loo discloses:

“These preferred arrangements are particularly suitable for dealing with cells that each have a header which includes routing bytes and an HEC check byte, wherein the cell identification means identifies the cell boundary by calculating the value of the routing bytes, comparing the calculated value with the HEC check byte and then generating the match signal when the calculated value matches the HEC check byte.”

Identification of “the cell boundary” is not “determining the statically varying packet size based on the first and second boundaries” as claimed in claim 1 of the present application.

For yet another example, the Loo reference does not teach “counting missed boundaries at a synchronization circuit responsive to entering the sync state,” as claimed in claim 1. In describing the reasons for allowance of claim 43, the Examiner states “the prior art of record does not teach a synchronization circuit...that is adapted to count *N* consecutive valid boundaries to enter a sync state *and to count M consecutive missed boundaries to exit the sync state*.” (Emphasis added.)

The Loo reference does not teach all aspects of claim 1. Therefore, claim 1 is allowable and a withdrawal of the rejection of claim 1 is respectfully requested.

Claims 2-7 and claim 48 depend from claim 1 and are also allowable for at least the reasons identified above. Since the applicant believes the dependent claims are allowable for the above reasons, arguments to all rejections to said claims may not have been provided in this response. The applicant however, retains the right to address said rejection if a further response is required.

CLAIM 8

The applicant respectfully traverses the rejection of claim 8 under section 102. The Loo reference does not teach all the aspects of claim 8. For example, the Loo reference does not teach “A method for automatically adapting to statically varying packet size,” as claimed in claim 8. The Examiner asserts the Loo reference discloses this aspect in Figures 1-3.

The Loo reference discloses that “Figure 1 is a diagram of the structure of an ATM bit stream...consisting of a series of ATM cells 10, 11, 12, etc.” at column 7, line 21-27. The Loo reference describes the *fixed length of the ATM cell* at column 8, lines 5-10 as:

“The body 10B is in fact 48 bytes long so the *total cell length is 53 bytes*, i.e., 424 (53 x 8) bits.

The purpose of the present apparatus is to identify the points in the bit stream shown in Fig.1A where the ATM cell boundaries lie. There are 424 possible positions for the cell boundaries, *only one of which is correct.*” (Emphasis added.)

Referring to Figure 2 at column 8, line 12 – column 9, line 21, Loo discloses how “true cell headers have been detected” (column 9 line 20-21) of the possible 242 positions. Loo discloses only one “cell length of 53 bytes,” which is not a statically varying packet size.

Statically varying is defined in the present application at paragraph 16 as:

“...the packet size is said to be “statically varying” because the size of the packets is able to change (“varying”) but stays the same (“statically”) for a long enough time for useful information to be transmitted over the system. In this way, system upgrades that introduce or change out of band signaling are accomplished without any changes or modifications to the TC layer.”

Referring to Figure 3 at column 10, lines 9-10, Loo discloses how “the FIFO contains additional match counter bits, for counting the number of sequential matches at the *predetermined spacing*.” The “predetermined spacing” is fixed and does not demarcate a statically varying packet size.

For another example, the Loo reference does not teach “tracking boundary errors in the sync state to determine when synchronization is lost.” The Examiner asserts the Loo reference discloses this aspect at column 11, lines 21-25 and column 11, lines 27-32. At column 11, lines 21-25 and column 11, line 27- column 12, line 2, Loo discloses:

“These preferred arrangements are particularly suitable for dealing with cells that each have a header which includes routing bytes and an HEC check byte, wherein the cell identification means identifies the cell boundary by calculating the value of the routing bytes, comparing the calculated value with the HEC check byte and then generating the match signal when the calculated value matches the HEC check byte. A method is also disclosed of achieving synchronisation [*sic*] in a bit stream of cells with no defined synchronisation [*sic*] pattern, each cell having a header portion and a data portion. More particularly, the method includes the steps of identifying a bit sequence in the stream which signifies a cell boundary; generating a match signal each time a potential cell boundary is identified; storing data, which is synchronised [*sic*] with the bit rate of the data stream and which represents the positions of the potential cell boundaries; and *establishing synchronisation [*sic*] when a predetermined number of match signals have been detected with the same cell boundary spacing*.” (Emphasis added.)

The “establishing synchronisation [*sic*] when a predetermined number of match signals have been detected with the same cell boundary spacing” is not “tracking boundary errors in the sync state to determine when synchronization is lost” as claimed in claim 8 of the present application.

For another example, the Loo reference does not teach “counting a number of bytes between the first and second boundaries to determine the *statically varying packet size*,” as claimed in claim 8. The Loo reference discloses the objective at column 3, lines 13-17 as:

“to provide an improved technique for detecting cell boundaries or establishing synchronisation [*sic*] with a bit stream. Although primarily applicable to delineation of *ATM cells*, the invention may be more generally applied to detect the sequential occurrence of two or more ‘signatures’ at *predetermined intervals in a serial bit stream*.” (Emphasis added.)

It is known in the art, that ATM encodes data traffic into fixed size cells. Likewise, “predetermined intervals in a serial bit stream” are fixed size cells.

Therefore, Loo reference does not teach all aspects of claim 8. Claim 8 is allowable and a withdrawal of the rejection of claim 8 is respectfully requested.

CLAIM 9

The applicant respectfully traverses the rejection of claim 9 under section 102. The Loo reference does not teach all the aspects of claim 9. For example, the Loo reference does not teach “a method for automatically adapting to *statically varying packet size*.” The Examiner asserts the Loo reference discloses this aspect in Figures 1-3.

The Loo reference discloses that “Figure 1 is a diagram of the structure of an ATM bit stream...consisting of a series of ATM cells 10, 11, 12, etc.” at column 7, line 21-27. The Loo reference describes the *fixed length of the ATM cell* at column 8, lines 5-10 as:

“The body 10B is in fact 48 bytes long so the *total cell length is 53 bytes*, i.e., 424 (53 x 8) bits.

The purpose of the present apparatus is to identify the points in the bit stream shown in Fig.1A where the ATM cell boundaries lie. There are 424 possible positions for the cell boundaries, *only one of which is correct*.” (Emphasis added.)

With reference to Figure 2, at column 8, line 12 – column 9, line 21, Loo discloses how “true cell headers have been detected” (column 9 line 20-21) of the

possible 242 positions. Loo discloses only one “cell length of 53 bytes,” which is not a statically varying packet size.

Statically varying is defined in the present application at paragraph 16 as:

“...the packet size is said to be “statically varying” because the size of the packets is able to change (“varying”) but stays the same (“statically”) for a long enough time for useful information to be transmitted over the system. In this way, system upgrades that introduce or change out of band signaling are accomplished without any changes or modifications to the TC layer.”

With reference to Figure 3, at column 10, lines 9-10, Loo discloses how “the FIFO contains additional match counter bits, for counting the number of sequential matches at the *predetermined spacing*.” The “predetermined spacing” is fixed and does not demarcate a statically varying packet size.

Therefore, Loo reference does not teach all aspects of claim 9. Claim 9 is allowable and a withdrawal of the rejection of claim 9 is respectfully requested.

Claims 10-13 depend from claim 9 and are also allowable for at least the reasons identified above. Since the applicant believes the dependent claims are allowable for the above reasons, arguments to all rejections to said claims may not have been provided in this response. The applicant however, retains the right to address said rejection if a further response is required.

CLAIM 15

The applicant respectfully traverses the rejection of claim 15 under section 102. The Loo reference does not teach all the aspects of claim 15. For example, the Loo reference does not teach “A method for automatically adapting to statically varying packet size,” as claimed in claim 15. The Examiner asserts the Loo reference discloses this aspect in Figures 1-3.

The Loo reference discloses that “Figure 1 is a diagram of the structure of an ATM bit stream...consisting of a series of ATM cells 10, 11, 12, etc.” at column 7, line

21-27. The Loo reference describes the *fixed length of the ATM cell* at column 8, lines 5-10 as:

“The body 10B is in fact 48 bytes long so the *total cell length is 53 bytes*, i.e., 424 (53 x 8) bits.

The purpose of the present apparatus is to identify the points in the bit stream shown in Fig.1A where the ATM cell boundaries lie. There are 424 possible positions for the cell boundaries, *only one of which is correct.*” (Emphasis added.)

Referring to Figure 2 at column 8, line 12 – column 9, line 21, Loo discloses how “true cell headers have been detected” (column 9 line 20-21) of the possible 242 positions. Loo discloses only one “cell length of 53 bytes,” which is not a statically varying packet size.

Statically varying is defined in the present application at paragraph 16 as:

“...the packet size is said to be “statically varying” because the size of the packets is able to change (“varying”) but stays the same (“statically”) for a long enough time for useful information to be transmitted over the system. In this way, system upgrades that introduce or change out of band signaling are accomplished without any changes or modifications to the TC layer.”

Referring to Figure 3 at column 10, lines 9-10, Loo discloses how “the FIFO contains additional match counter bits, for counting the number of sequential matches at the *predetermined spacing*.” The “predetermined spacing” is fixed and does not demarcate a statically varying packet size.

For another example, the Loo reference does not teach “monitoring packet size of packets received in the sync state; and when M packets vary from the expected packet size, exiting the sync state.” The Examiner asserts that the Loo reference teaches “monitoring packet size of packets received in the sync state; and when M packets vary from the expected packet size, exiting the sync state,” at column 11, lines 21-32. At column 11, line 21- column 12, line 2 Loo discloses:

“These preferred arrangements are particularly suitable for dealing with cells that each have a header which includes routing bytes and an HEC check byte, wherein the cell identification means identifies the cell boundary by calculating the value of the routing bytes, comparing the

calculated value with the HEC check byte and then generating the match signal when the calculated value matches the HEC check byte.

A method is also disclosed of achieving synchronisation [*sic*] in a bit stream of cells with no defined synchronisation [*sic*] pattern, each cell having a header portion and a data portion. More particularly, the method includes the steps of identifying a bit sequence in the stream which signifies a cell boundary; generating a match signal each time a potential cell boundary is identified; storing data, which is synchronised [*sic*] with the bit rate of the data stream and which represents the positions of the potential cell boundaries; and *establishing synchronisation [*sic*]* when a predetermined number of match signals have been detected with the same cell boundary spacing.” (Emphasis added.)

Identification of “the cell boundary,” and “*establishing synchronisation [*sic*]* when a predetermined number of match signals have been detected” as described at column 11, line 21- column 12, line 2 is not “monitoring packet size of packets *received in the sync state*; and when M packets vary from the expected packet size, *exiting the sync state*” as claimed in claim 15 of the present application.

The Loo reference does not teach all aspects of claim 15. Therefore, claim 15 is allowable and a withdrawal of the rejection of claim 15 is respectfully requested.

Claims 16-19 depend from claim 15 and are also allowable for at least the reasons identified above. Since the applicant believes the dependent claims are allowable for the above reasons, arguments to all rejections to said claims may not have been provided in this response. The applicant however, retains the right to address said rejection if a further response is required.

CLAIM 26

The applicant respectfully traverses the rejection of claim 26 under section 102. The Loo reference does not teach all the aspects of claim 26. For example, the Loo reference does not teach “A computer readable medium encoded with computer interpretable instructions for a method for automatically adapting to statically varying

packet size,” as claimed in claim 26. The Examiner asserts the Loo reference discloses this aspect in Figures 1-3.

The Loo reference discloses that “Figure 1 is a diagram of the structure of an ATM bit stream...consisting of a series of ATM cells 10, 11, 12, etc.” at column 7, line 21-27. The Loo reference describes the *fixed length of the ATM cell* at column 8, lines 5-10 as:

“The body 10B is in fact 48 bytes long so the *total cell length is 53 bytes*, i.e., 424 (53 x 8) bits.

The purpose of the present apparatus is to identify the points in the bit stream shown in Fig.1A where the ATM cell boundaries lie. There are 424 possible positions for the cell boundaries, *only one of which is correct.*” (Emphasis added.)

Referring to Figure 2 at column 8, line 12 – column 9, line 21, Loo discloses how “true cell headers have been detected” (column 9 line 20-21) of the possible 242 positions. Loo discloses only one “cell length of 53 bytes,” which is not a statically varying packet size.

Statically varying is defined in the present application at paragraph 16 as:

“...the packet size is said to be “statically varying” because the size of the packets is able to change (“varying”) but stays the same (“statically”) for a long enough time for useful information to be transmitted over the system. In this way, system upgrades that introduce or change out of band signaling are accomplished without any changes or modifications to the TC layer.”

Referring to Figure 3 at column 10, lines 9-10, Loo discloses how “the FIFO contains additional match counter bits, for counting the number of sequential matches at the *predetermined spacing.*” The “predetermined spacing” is fixed and does not demarcate a statically varying packet size.

For another example, the Loo reference does not teach “A computer readable medium encoded with computer interpretable instructions for a method...comprising...monitoring packet size of packets received in the sync state; and when M packets vary from the expected packet size, exiting the sync state.” The Examiner asserts that the Loo reference teaches “monitoring packet size of packets received in the sync state; and when M packets vary from the expected packet size,

exiting the sync state,” at column 11, lines 21-32. At column 11, line 21- column 12, line 2 Loo discloses:

“These preferred arrangements are particularly suitable for dealing with cells that each have a header which includes routing bytes and an HEC check byte, wherein the cell identification means identifies the cell boundary by calculating the value of the routing bytes, comparing the calculated value with the HEC check byte and then generating the match signal when the calculated value matches the HEC check byte.

A method is also disclosed of achieving synchronisation [*sic*] in a bit stream of cells with no defined synchronisation [*sic*] pattern, each cell having a header portion and a data portion. More particularly, the method includes the steps of identifying a bit sequence in the stream which signifies a cell boundary; generating a match signal each time a potential cell boundary is identified; storing data, which is synchronised [*sic*] with the bit rate of the data stream and which represents the positions of the potential cell boundaries; and *establishing synchronisation [*sic*]* when a predetermined number of match signals have been detected with the same cell boundary spacing.” (Emphasis added.)

Identification of “the cell boundary,” and “*establishing synchronisation [*sic*]* when a predetermined number of match signals have been detected” as described at column 11, line 21- column 12, line 2 is not “monitoring packet size of packets *received in the sync state*; and when M packets vary from the expected packet size, *exiting the sync state*” as claimed in claim 26 of the present application.

The Loo reference does not teach all aspects of claim 26. Therefore, claim 26 is allowable and a withdrawal of the rejection of claim 26 is respectfully requested.

Claims 27-30 depend from claim 26 and are also allowable for at least the reasons identified above. Since the applicant believes the dependent claims are allowable for the above reasons, arguments to all rejections to said claims may not have been provided in this response. The applicant however, retains the right to address said rejection if a further response is required.

CLAIM 31

The applicant respectfully traverses the rejection of claim 31 under section 102. The Loo reference does not teach all the aspects of claim 31. For example, the Loo reference does not teach “A computer readable medium encoded with computer instructions stored thereon for a method for automatically adapting to *statically varying packet size*.” The Examiner asserts the Loo reference discloses this aspect in Figures 1-3.

The Loo reference discloses that “Figure 1 is a diagram of the structure of an ATM bit stream...consisting of a series of ATM cells 10, 11, 12, etc.” at column 7, line 21-27. The Loo reference describes the *fixed length of the ATM cell* at column 8, lines 5-10 as:

“The body 10B is in fact 48 bytes long so the *total cell length is 53 bytes*, i.e., 424 (53 x 8) bits.
The purpose of the present apparatus is to identify the points in the bit stream shown in Fig.1A where the ATM cell boundaries lie. There are 424 possible positions for the cell boundaries, *only one of which is correct*.” (Emphasis added.)

With reference to Figure 2, at column 8, line 12 – column 9, line 21, Loo discloses how “true cell headers have been detected” (column 9 line 20-21) of the possible 242 positions. Loo discloses only one “cell length of 53 bytes,” which is not a statically varying packet size.

With reference to Figure 3, at column 10, lines 9-10, Loo discloses how “the FIFO contains additional match counter bits, for counting the number of sequential matches at the *predetermined spacing*.” The “predetermined spacing” is fixed and does not demarcate a statically varying packet size.

Statically varying is defined in the present application at paragraph 16 as:

“...the packet size is said to be “statically varying” because the size of the packets is able to change (“varying”) but stays the same (“statically”) for a long enough time for useful information to be transmitted over the system. In this way, system upgrades that introduce or change out of band signaling are accomplished without any changes or modifications to the TC layer.”

For another example, the Loo reference does not teach “re-determining the packet size after a selected number of errors in the processing of packets.” The Examiner did not point out where the Loo reference discloses this aspect of claim 31 (see comments in Office action dated 1/11/2008 regarding claim 13). However, the Applicant asserts that the Loo reference is not “re-determining the packet size after a selected number of errors in the processing of packets.” The Loo reference describes the “fixed length of the ATM cell” and “counting the number of sequential matches at the predetermined spacing.”

Therefore, Loo reference does not teach all aspects of claim 31. Claim 31 is allowable and a withdrawal of the rejection of claim 31 is respectfully requested.

Claims 32-34 depend from claim 31 and are also allowable for at least the reasons identified above. Since the applicant believes the dependent claims are allowable for the above reasons, arguments to all rejections to said claims may not have been provided in this response. The applicant however, retains the right to address said rejection if a further response is required.

CLAIM 36

The applicant respectfully traverses the rejection of claim 36 under section 102. The Loo reference does not teach all the aspects of claim 36. For example, the Loo reference does not teach “A computer readable medium encoded with interpretable instructions for a method for automatically adapting to statically varying packet size.” The Examiner asserts the Loo reference discloses this aspect in Figures 1-3.

The Loo reference discloses that “Figure 1 is a diagram of the structure of an ATM bit stream...consisting of a series of ATM cells 10, 11, 12, etc.” at column 7, line 21-27. The Loo reference describes the *fixed length of the ATM cell* at column 8, lines 5-10 as:

“The body 10B is in fact 48 bytes long so the *total cell length is 53 bytes*, i.e., 424 (53 x 8) bits.

The purpose of the present apparatus is to identify the points in the bit stream shown in Fig.1A where the ATM cell boundaries lie. There are 424

possible positions for the cell boundaries, *only one of which is correct.*" (Emphasis added.)

With reference to Figure 2, at column 8, line 12 – column 9, line 21, Loo discloses how "true cell headers have been detected" (column 9 line 20-21) of the possible 242 positions. Loo discloses only one "cell length of 53 bytes," which is not a statically varying packet size.

Statically varying is defined in the present application at paragraph 16 as:

"...the packet size is said to be "statically varying" because the size of the packets is able to change ("varying") but stays the same ("statically") for a long enough time for useful information to be transmitted over the system. In this way, system upgrades that introduce or change out of band signaling are accomplished without any changes or modifications to the TC layer."

With reference to Figure 3, at column 10, lines 9-10, Loo discloses how "the FIFO contains additional match counter bits, for counting the number of sequential matches at the *predetermined spacing*." The "predetermined spacing" is fixed and does not demarcate a statically varying packet size.

For another example, the Loo reference does not teach "A computer readable medium encoded with interpretable instructions for a method for a method...comprising...determining the statically varying packet size based on the first and second boundaries" as claimed in claim 36. The Examiner asserts the Loo reference discloses this aspect at column 11, lines 21-25. At column 11, lines 21-25 Loo discloses:

"These preferred arrangements are particularly suitable for dealing with cells that each have a header which includes routing bytes and an HEC check byte, wherein the cell identification means identifies the cell boundary by calculating the value of the routing bytes, comparing the calculated value with the HEC check byte and then generating the match signal when the calculated value matches the HEC check byte."

Identification of "the cell boundary" is not "determining the *statically varying packet size* based on the first and second boundaries" as claimed in claim 36 of the present application.

The Loo reference does not teach all aspects of claim 36. Therefore, claim 326 is allowable and a withdrawal of the rejection of claim 36 is respectfully requested.

Claims 37-42 depend from claim 36 and are also allowable for at least the reasons identified above. Since the applicant believes the dependent claims are allowable for the above reasons, arguments to all rejections to said claims may not have been provided in this response. The applicant however, retains the right to address said rejection if a further response is required.

Allowable Subject Matter

The Applicant thanks the Examiner for indicating that claims 14, 20-25, and 43-47 are allowable.

Serial No.: 10/756,899

Filing Date: 1/14/2004

Attorney Docket No. 100.401US01

Title: AUTO-ADAPTATION TO PACKET SIZE ON A PHYSICAL MEDIUM

CONCLUSION

Applicant respectfully submits that claims 1-34 and 36-48 are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: April 9, 2008

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